

# I. Backend API

## 1.1 Market Information

GET: <https://openapi.just.network/lend/jtoken>

Parameter description: N/A

Returns:

```
{
  "code": 0,
  "message": "SUCCESS",
  "data": {
    "tokenList": [{
      "address": "TDchKqQ8T2BhGfL7m2DfWfxp5eqa1we5hu", //address of jToken
      "underlyingAddress": "T9yD14Nj9j7xAB4dbGeiX9h8unkKHxuWwb", //address of the underlying
      asset
      "underlyingDecimal": 6, //decimal of the underlying asset
      "underlyingPriceInTrx": "1.000000", //price of the underlying asset (in TRX)
      "symbol": "jTRX", //symbol of jToken
      "underlyingSymbol": "TRX", //symbol of the underlying asset
      "collateralFactor": "0.7500000000000000", //collateral factor
      "reserveFactor": "0.1000000000000000", //reserve factor
      "exchangeRate": "0.010004175484185673", //exchange rate between jToken and the
      corresponding Token
      "borrowRate": "0.032076159971472000", //borrowing APY
      "supplyRate": "0.003486211548048000", //supplying APY
      "cash": "540965.907046000000000000", //amount of cash in the contract
      "reserves": "27.193286000000000000", //amount of reserve in the contract
      "totalBorrows": "74296.866915000000000000", //total borrowed amount
      "totalSupply": "61497879.72507555", //total supply of jToken
    }
  ]
}
```

## 1.2 Account Information

GET:

<https://openapi.just.network/lend/account>

Parameter description:

Parameter	Type	Required	Description
address	String	No	Query of the address list; separated by commas when there are multiple addresses
minBorrowValueInTrx	String	No	Query of the minimum value of borrowed asset in TRX
maxHealth	String	No	Query of the max health value; entries with 0 health value will be filtered out when this parameter is used
pageNo	int	No	Page number
pageSize	int	No	Page size; the max page size is 1000

Returns:

```
{
  "code": 0,
  "data": {
    "totalPage": 1, // total pages
    "list": [{
      "address": "TTJJvoPKGvKnbUBPVTn1Zi8o6k3EfFDXVS", //user address
      "health": "1.051123", //health value, when health value is smaller than 1, the account can be
      liquidated
      "tokens": [{
        "address": "TTUtHMoRLR97C3kd6gyGPWb1ReCWDcRAyA", //jToken address
        "entered": 1, //collateral switch for the underlying asset; 1 means open, 0 means closed
        "underlyingSymbol": "USDt" //token symbol of the underlying asset
      }],
      "borrowBalanceUnderlying": "690.34863897809162688555918", //balance of the underlying asset for
      borrowing
      "supplyBalanceUnderlying": "15.00524721487779258852751065", //balance of the
      underlying asset for supplying
    }],
    "totalBorrowValueInTrx": "1823305.071152", //total loan of the account (in TRX)
    "totalCollateralValueInTrx": "1916517.351443" //total collateral of the account (in TRX)
  },
  "totalCount": 1 //total number of entries
},
"message": "SUCCESS"
}
```

## II. Smart Contract API

### 2.1 Smart Contract Address

Name	Contract Address
Unitroller	TGjYzgCyPobsNS9n6WcbdLVR9dH7mWqFx7
jTRX	TE2RzoSV3wFK99w6J9UnnZ4vLfXYoxvRwP
jUSDT	TXJgMdjVX5dKiQaUi9QobwNxtSQaFqccvd
jUSDJ	TL5x9MtSnDy537FXKx53yAaHRRNdG9TkkA
jSUN	TGBr8uh9jBVHJhhkwSjvQN2ZAKzVkdMno
jWIN	TRg6MnpsFXc82ymUPgf5qbj59ibxiEDWv
jBTC	TLeEu311Cbw63BcmMHDgDLu7fnk9fqGcqT
jJST	TWQhCXaWz4eHK4Kd1ErSDHjMFPoPc9czts
jWBTT	TUY54PVeH6WCcYCd6ZXXoBDsHytN9V5PXt

### 2.2 Liquidation Flow

#### 2.2.1 Query Interface

##### 1. Liquidation Incentive

function liquidationIncentiveMantissa() view returns (uint)

**Feature description:** By calling the liquidationIncentiveMantissa function of the Unitroller contract, liquidation incentives can be inquired. Liquidators will be given a proportion of the borrower's collateral as an incentive, which is defined as liquidation incentive. This is to encourage liquidators to perform liquidation of underwater accounts.

Parameter description: N/A

Returns :

uint256	Liquidation incentive. The rate is 1e18.
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## 2. getAccountLiquidity

function getAccountLiquidity(address account) view returns (uint, uint, uint)

**Feature description:** By calling the getAccountLiquidity function of the Unitroller contract, account information can be accessed through an account's address to determine whether the account should be liquidated or not.

Parameter description:

Parameter	Type	Description
account	address	User address

Returns:

uint256	error (error code, 0 means success)
uint256	liquidity
uint256	shortfall (When the value is bigger than 0, the current account does not meet the market requirement for collateralization and needs to be liquidated.)

Note: There should be at most one non-zero value between liquidity and shortfall.

## 2.2.2 Modification Interface

### 1. Liquidate Borrow (jTrc20)

function liquidateBorrow(address borrower, uint repayAmount, address jTokenCollateral) returns (uint)

**Feature description:** By calling liquidateBorrow function of the corresponding jTrc20 contract (e.g. jUSDT), accounts whose liquidity does not meet the market requirement for collateralization will be liquidated by other users to restore the account liquidity to a normal level (i.e. higher than the market requirement for collateralization). In the event of liquidation, liquidators may repay part or 50% of the loan for the borrower. Liquidators will be given a proportion of the borrower's collateral as an incentive.

Parameter description:

Parameter	Type	Description
borrower	address	Address of a liquidated account
repayAmount	uint256	Amount of token to be repaid in the event of liquidation (measured in the borrowed asset)
jTokenCollateral	address	Address of the jTOKEN contract to set aside the collateralized asset of a borrower

Returns :

uint256	0 means success. Other value returned represents the corresponding error code.
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## 2. Liquidate Borrow (jTRX)

function liquidateBorrow(address borrower, address jTokenCollateral) payable

**Function description:**By calling the liquidateBorrow function of the jTRX contract, accounts whose liquidity does not meet the market requirement for collateralization will be liquidated by other users to restore the account liquidity to a normal level (i.e., higher than the market requirement for collateralization). In the event of liquidation, liquidators may repay part or 50% of the loan for the borrower. Liquidators will be given a proportion of the borrower's collateral as an incentive.

Parameter description:

Parameter	Type	Description
borrower	address	Address of a liquidated account
msg.value	uint256	Amount of TRX to be repaid in the event of liquidation (measured in SUN)
jTokenCollateral	address	Address of the jTRX contract to set aside the collateralized asset of a borrower

Returns :

No return. If any error occurs, the transaction will be reverted.

## 2.3 Appendix

### 2.3.1 jToken Decimals

All jTokens on JustLend have 8 decimal places.

### 2.3.2 jToken Balance Query

We suggest you use Tronweb to query jToken balance. For example, you can follow the steps below to query jUSDT balance:

```
//Example 1
async function triggercontract(){
  let instance =
awaittronWeb.contract().at('TXJgMdjVX5dKiQaUi9QobwNxtSQaFqccvd');
  let res = await instance.balanceOf().call();
  console.log(res);
}
triggercontract();
```

```
//Example 2
async function triggercontract(){
  let instance =
awaittronWeb.contract().at('TXJgMdjVX5dKiQaUi9QobwNxtSQaFqccvd');
  let res = await instance["balanceOf"]().call();
  console.log(res);
}
triggercontract();
```